

IMC CHEMICAL INC., ET AL.

IBLA 2000-56 and 2000-57

Decided July 17, 2001

Consolidated appeals from a record of decision of the State Director, Colorado State Office, Bureau of Land Management, approving a Commercial Mine Plan for the Yankee Gulch Sodium Minerals Project. Lease Nos. C-0118328 and C-0118329.

Affirmed.

1. Environmental Quality: Environmental Statements--Federal Land Policy and Management Act of 1976: Plan of Operations--Mining Claims: Plan of Operations--National Environmental Policy Act of 1969: Environmental Statements

BLM's approval of a plan of operations for sodium solution mining will be affirmed where BLM has taken a hard look in an EIS at the significant environmental consequences of mining operations and reasonable alternatives, and where the record supports BLM's conclusion that the plan will not result in unnecessary or undue degradation of the public lands.

APPEARANCES: Lawrence A. Hobel, Esq. and Monica P. Medina, Esq., Washington, D.C., for IMC Chemicals, Inc.; Anne L. McGihon, Esq., Denver, Colorado, and Roger Flynn, Esq. and Jeffrey C. Parsons, Esq., Boulder, Colorado, for the Rocky Mountain Chapter of the Sierra Club and the Mineral Policy Center; Laura Lindley, Esq., Denver, Colorado, for Intervenor American Soda, L.L.P.; 1/ Eugene Park, Parachute, Colorado, for Intervenor Grand Valley Citizens Alliance; and Lyle Rising, Esq., Office of the Regional Solicitor, U.S. Department of the Interior, Lakewood, Colorado, for the Bureau of Land Management.

1/ Lawrence G. McBride, Esq., Friedman, Levy, Kroll and Simonds, Washington, D.C., initially participated as counsel for American Soda, L.L.P. in this matter and participated in filing its Answer. Mr. McBride subsequently withdrew his representation of American Soda when the law firm in which he is employed was merged with a firm with interests which are inconsistent with those that had been represented by Friedman, Levy, Kroll and Simonds in this lawsuit.

OPINION BY ADMINISTRATIVE JUDGE TERRY

IMC Chemical, Inc. (IMC), has appealed the October 20, 1999, Record of Decision (ROD) of the Colorado State Director, Bureau of Land Management (BLM), approving the commercial mine plan for the Yankee Gulch Sodium Minerals Project (Yankee Gulch Project) and associated pipeline right-of-way (ROW) (IBLA 2000-56). The Rocky Mountain Chapter of the Sierra Club and the Mineral Policy Center (collectively Sierra) also appealed the October 20, 1999, ROD in IBLA 2000-57. As both appeals challenge the same decision and raise similar environmental issues, they have been consolidated for review by the Board.

In a Motion to Intervene filed with the Board on December 6, 1999, American Soda, L.L.P. (American Soda, Respondent), stated that the decision appealed from in IBLA 2000-56 and IBLA-57 challenged the BLM approval it received for its Yankee Gulch Project mine plan of operations on Federal sodium leases in Rio Blanco County, Colorado, and in Garfield County, Colorado. Our review of the record confirmed that American Soda is indeed a party to the case and its Motion to Intervene was granted in an Order dated January 4, 2000. Similarly, the Grand Valley Citizens Alliance (Alliance) filed a Motion to Intervene. The Alliance is comprised primarily of persons residing in Garfield County Colorado, where part of the Yankee Gulch Project will be conducted. The Board granted the Alliance's Motion in its January 4 Order after determining that members of the Alliance are parties to the case and would likely be affected by the project's implementation.

Appellants IMC and Sierra filed Petitions to Stay the October 20, 1999, decision of the State Director. These Petitions were denied in the Board's January 4, 2000, Order.

As a brief background to this appeal, American Soda submitted a commercial mine plan to BLM in August 1998 pursuant to 43 CFR 3592 to recover the sodium resource from nahcolite deposits in the Piceance Basin under the Yankee Gulch Joint Venture Leases (U.S. Sodium Lease Nos. C-0118328 and C-0118329). The proposal involves the construction and operation of a commercial solution mine that will extract 1.4 million tons per year of nahcolite over a 30-year period. The Yankee Gulch Project proposal involves three distinct areas: the mining production well field and initial processing facility on approximately 1,030 acres within BLM's White River Resource Area in Rio Blanco County; two parallel, approximately 44-mile-long pipelines on BLM and private lands in both Rio Blanco and Garfield Counties; and a processing facility on 304 acres at an existing, inactive industrial facility on private land near the town of Parachute in Garfield County. The decision appealed from addressed only those American Soda activities to be conducted on BLM lands.

In BLM's examination of the American Soda proposal, four alternatives were evaluated in detail in the Draft Environmental Impact Statement (DEIS) and in the Final Environmental Impact Statement (FEIS) (collectively EIS). The action proposed by American Soda, outlined above, would require that approximately 15 wells be developed concurrently each year to a depth of

2000 feet. Well spacing would be approximately 300 feet apart within identified mining panels. The mining panels, located at ridgetops, would be sequentially developed at 5-year intervals. (FEIS at ES-1 to ES-2.) As stated in the American Soda proposal:

Each mining panel would be sequentially reclaimed after mining in the panel stops. Each well is expected to have a mining production life of 1.5 to 3 years. The dissolved nahcolite would be transported from the initial processing facility at the Piceance Site via the 44-mile-long pipeline to the Parachute Site where it would be processed into commercial-grade soda ash and sodium bicarbonate. Water recovered from final processing would be transported back to the Piceance Site for use in solution mining. Bulk products would be transported from the Parachute Site to an interstate rail connection at the town of Parachute, and sodium bicarbonate would be shipped by truck. The construction period would last approximately 18 months. The construction work force would vary up to 390 employees during the construction period, and the project would employ approximately 160 permanent employees during operations.

(FEIS at ES-2.)

The Agency Preferred Alternative, approved in the ROD, is similar to the Proposed Action and accomplishes the goal of mining sodium products, but imposes additional BLM-required mitigation to reduce potential adverse effects. The Agency Preferred Alternative includes five mitigation/monitoring plans: (1) Pipeline Plan of Development; (2) Subsidence Monitoring Plan; (3) Groundwater and Surface Water Monitoring Plan; (4) Soil Conservation, Erosion and Sediment Control, Reclamation, and Revegetation Plan; and (5) Wildlife Mitigation Plan. (FEIS at 2-1 to 2-15.) In addition, this alternative incorporates the Biological Assessment submitted to the U.S. Fish and Wildlife Service (FWS) and several modifications in response to public and agency comments including: (1) eliminating the cooling towers at both the Piceance Site and the Parachute Site; (2) adding a stormwater retention pond to the Piceance Site; (3) eliminating the proposed realignment of the Yellow Creek Jeep Trail (Rio Blanco County Road 83) as described in the DEIS; (4) covering all process ponds with netting to prevent potential impacts to migratory birds; (5) revising the pipeline route between the Piceance Site and Parachute Site to reduce potential impacts; and (6) providing for a 50-foot right-of-way for the pipeline with temporary use permits allowing use of up to a 125-foot total width for construction. (ROD at 3-4.)

The Accelerated Development Alternative is similar to the Proposed Action, with accelerated solution mine development increasing nahcolite recovery to approximately 4 million tons per year, which is triple the recovery planned under the Proposed and Preferred Alternatives. Approximately 45 wells would be developed per year (triple the number in the Proposed Action), although the total number of wells and the total area to be developed would remain the same as under the Proposed Action.

Under this accelerated option, the estimated life of the solution mining operation would be reduced to approximately 10 years, compared with 30 years under the Proposed Action. Accordingly, this alternative would require that the size of the initial processing plant at the Piceance Site be increased, as would the final processing plant at Parachute. There would be no change to the pipeline installation under this alternative, other than the installation of auxiliary pumps on each line. (FEIS at ES-2.)

A No-Action Alternative was also considered. Under this alternative, the Yankee Gulch Project Commercial Mine Plan would not be approved, although ongoing mining activities approved under the existing Exploration Plan and Test Mine Plan could continue. In all likelihood, these activities would be shortly discontinued. The environmental conditions currently existing on the proposed area of operations would continue unchanged. (FEIS at ES-2.)

In approving the Agency Preferred Alternative, the State Director examined each of the relevant environmental impacts before approving the project. He determined that the impacts to geologic resources under the Preferred Agency Alternative would be less than those associated with the Proposed Action, as monitoring techniques identified in the Subsidence Monitoring Plan would be implemented to detect subsurface movement, triggering mitigative actions. (FEIS at ES-3.) He found that there would be some soil loss due to erosion and an interruption of natural soil development, but that these impacts would be minimized by erosion control and reclamation. The amount of soil lost through erosion would be lessened through the incorporation of soil retention techniques identified in the Retention Plan. Id. The ROD determined that no significant long-term impacts to surface water and surface water drainages are anticipated, although short-term increases of sedimentation would result from construction activities at all three project sites. These would be minimized with effective implementation of "best management practices," reclamation efforts, and a combination of erosion control, spill response planning, and surface water monitoring as set forth in the Agency Preferred Alternative. Id.

The decision appealed from further determined that it is unlikely that adverse impacts would occur to groundwater quality considering the detailed monitoring and response programs and revised well-plugging and abandonment procedures set forth in the Groundwater and Surface Water Monitoring Plan. Pursuant to this Plan, any deviations in groundwater quality during mining would be identified and corrective actions implemented. (FEIS at ES-4.) With regard to air quality, "[m]aximum ground level concentrations of air pollution (including background and interacting sources)) were predicted to be well below the applicable standards (National Ambient Air Quality Standards [NAAQS]/Colorado Ambient Air Quality Standards [CAAQS])." Id.

The ROD determined that estimated noise levels for the project would be within Industrial Zone standards onsite and would be attenuated by distance off-site. (FEIS at ES-5.) The FEIS reported, in this regard:

Trucks (associated with existing operating facilities) presently travel along both County Road 215 and Piceance Creek Road. Heavy truck traffic related to the Yankee Gulch Project would increase the frequency of noise events affecting residences located along both routes. The impacts are not considered significant because the number of affected receptors is limited, the additional traffic would cause only an increase to the frequency of disturbance (and not an increase in the level of disturbance), and each noise event would be temporary, relatively short in duration, and not sudden. Operation of the rail spur at the Parachute Site would fall below the state permissible daytime and nighttime Industrial Zone noise levels. (FEIS at ES-5.)

With regard to vegetation, wildlife, wetlands, and threatened and endangered species, the ROD again found no impediment to project approval. Under the Agency Preferred Alternative, impacts associated with the disturbance of vegetation would be reduced through the retention of higher-density stands of pinyon-juniper and through revegetation techniques identified in the Wildlife Mitigation Plan. Id. Under procedures described in the Wildlife Mitigation Plan,

[d]isplacement would be reduced through the retention of higher density stands of pinyon-juniper. Habitat losses would be reduced through off-site habitat enhancement. Above-ground pipe racks and other facilities that could impede deer migration and movements would have overpasses and underpasses to allow for easier movement within mine panels. Raptor nests would be identified prior to the initiation of any mine panel development activities. Active nests would be protected using standard BLM timing restrictions and surface occupancy restrictions. Water fowl would be protected from contact with hypersaline waters by netting of process ponds.

(FEIS at ES-6.) Similarly, pipeline construction would cause only short-term modification of soils and vegetation in three affected wetlands, and these areas would encompass less than one-third acre. The FEIS found that no wetlands would be affected at the Piceance or Parachute Sites. Id.

The ROD determined that impacts to threatened and endangered species would be reduced under the Agency Preferred Alternative. The FEIS notes that a Biological Assessment was submitted to the FWS and that formal consultation was conducted on potential effects to Colorado River fish. Id. Under the Preferred Alternative, all active ponds would be netted to prevent potential bird contact with hypersaline waters, and mitigation measures would be implemented to prevent direct impacts to listed plant species and to restore unoccupied suitable habitats. Further, raptor nests would be protected through the implementation of No Surface Occupancy stipulations and timing restrictions. Finally, sage grouse leks would be protected from surface disturbing activities during breeding periods, and

disturbed areas near lek sites would be revegetated with plant species that provide cover and forage. Id.

The ROD's examination of cultural and paleontological resources noted that 20 potentially significant prehistoric sites are located at the Piceance Site and may be adversely affected directly by construction or indirectly by surface collecting. (FEIS at ES-7.) Other sites would have no effects on known cultural or paleontological resources. To protect the known resources affected by the project, a Programmatic Agreement was prepared among BLM, State Historic Preservation Officer, American Council on Historic Preservation, and American Soda to ensure that American Soda (1) conducts appropriate cultural resource inventories for the project and (2) develops a Cultural Resource Treatment Plan to avoid, mitigate or minimize impacts. Id.

Land use and recreation and visual resources were also addressed within the ROD. The FEIS determined the project would be in compliance with BLM, Rio Blanco County, and Garfield County land use plans. However, mitigation measures to avoid impacts to federally protected plant species would be necessary for the project to be within BLM land use guidelines within the portion of the project area within the Ryan Gulch Area of Environmental Concern (ACEC). Id. Hunting and public access to most of the Piceance Site would still be available and regional impacts on hunting would not be significant. Nevertheless, the number of deer and the quality of the surroundings would be diminished. Id. Similarly, grazing impacts would be minimal and would not require an adjustment to grazing permits. Farming practices, however, would be affected by pipeline construction which would temporarily interfere with irrigation ditches and the delivery of water to hay meadows. Id.

Visual resources affected by approval of the Preferred Alternative would be substantial, especially at the Piceance Site. In that location the project would change the existing natural landscape to an industrial site. As noted in the FEIS:

The project would meet the visual resource guidelines for Visual Resource Management (VRM) Class III lands. However, the mining activities, as proposed, would likely exceed the guidelines for visual resource management in the Ryan Gulch ACEC. Areas impacted by mining activities would be reclassified to VRM Class V, which is a classification given to areas needing rehabilitation. This is an interim classification until reclamation results in a higher VRM objective to be met. The pipeline corridor would largely follow existing pipelines and would look the same or would be located in areas that are screened from view or have poor or no public access. The Parachute Site would not experience substantial visual change. However, the Agency Preferred Alternative would reduce impacts due to elimination of the cooling towers and reduction of off-site glare at night.

(FEIS at ES-7.)

Final areas of environmental concern addressed within the ROD include socioeconomics, transportation, hazardous materials and health and safety. In each case, the examination of the concern and the relevant mitigation measures applicable under the FEIS assured BLM that these impacts were not significant. See FEIS at ES-8 to 9.

In its Statement of Reasons (SOR) for appeal, IMC explains the gravamen of its reasons for appeal as follows:

Specifically, the BLM's Environmental Impact Statement ("EIS") for this Project fails to comply in several key respects with the requirements of the National Environmental Policy Act ("NEPA"), 43 U.S.C. §§ 4321-4370d. The BLM also violated its own White River Resources Management Plan ("RMP") when it neglected to perform baseline surveys for cultural resources within the Project's revised pipeline route before Project approval. Under this Board's prior decisions, the BLM failure to prepare an EIS that complies with NEPA and the RMP also means that, by definition, the BLM failed to carry out its mandatory duty to prevent the undue and unnecessary degradation of public lands under the Federal Land Policy and Management Act ("FLPMA"), 43 U.S.C. § 1732(c).

(IMC SOR at 2.)

In asserting that the EIS process was inadequate, IMC claims that "the EIS appears to be nothing more than a post-hoc rationalization for the decision to develop the project." (IMC SOR at 11.) IMC identifies five key areas as representative of the claimed inadequate analysis. These are: (1) the effect of in-situ mining on oil shale; (2) the impact of the project on groundwater; (3) the impact of the revised pipeline route; (4) the high level of emissions of volatile organic compounds (VOCs) caused by the project; and (5) the inadequate range of alternatives that the EIS examines. (IMC SOR at 12.)

IMC claims that the possible impacts on adjacent oil shale beds are not adequately reviewed. Appellant asserts that the impact of the high temperature solution methodology to be used in extracting the sodium "may cause some of the oil shale to break down and be extracted along with the nahcolite," or, "once pockets of nahcolite are removed, the remaining oil shale may shift and subside due to the empty cavities that remain." (IMC SOR at 13.) In claiming that oil shale will likely be extracted in violation of American Soda's lease provisions, IMC contends that the "basic facts about the mining process are not clearly discussed in detail in the EIS, but are explained in depth in the Agapito Report, which the public did not have an opportunity to review or comment upon." (IMC SOR at 14.) That report, IMC states, addressed work that was "completed at a higher temperature, at lower pressure or under different atmospheric conditions." Id., citing Agapito, at 2-3.

Appellant claims the only studies addressing in-situ mining of nahcolite is a Shell Oil study and American Soda's own test mine. IMC

claims that the Shell study is not a reliable test upon which to base a decision to proceed because the temperatures and pressures were lower and the size of the test cavity was much smaller. (IMC SOR at 15.) Appellant further claims that although the two American Soda test wells that have come into production on the leases have, after 2 years, not shown a significant byproduct of distillation of oil shale, "the comparison is inexact." Id.

Appellant also claims BLM inadequacy in addressing whether there may be significant subsidence caused by the solution mining process. (IMC SOR at 17.) Appellant states that while BLM addresses this issue through the development of a subsidence monitoring plan, the "actual size and shape of the cavity cannot be known until mining occurs." Id., quoting FEIS at 4-37. Appellant complains that despite this uncertainty about a basic design feature of the Project, the BLM has boldly predicted that "[r]esults from the test facility have adequately demonstrated the technical feasibility of the proposed mining and resource recovery methods." (IMC SOR at 18, quoting FEIS at 4-28.)

Another concern raised by appellant IMC relates to oil shale and the claimed lack of mitigation measures contained in the EIS for oil shale values. (IMC SOR at 18.) IMC states that "there is no mitigation of oil shale impacts, merely some vague assertions about 'adjusting' the mining strategy or changing the temperature of the solution." Id., citing DEIS at 2-20, Agapito at 2-2. Most disturbing in all of this, IMC claims, is that "the public has been so ignored and left out of the actual decision-making process." (IMC SOR at 19.) IMC asserts that the Agapito Report, which purports to provide the technical support for the Project with respect to oil shale issues, was unavailable to the public during the comment process. This failure in the environmental review process, appellant claims, "violates one of the fundamental pillars of NEPA." Id. IMC likewise claims that it was improperly denied technical information concerning the project by BLM that had been requested under the FOIA on the grounds that it is proprietary. Id.

The consideration of the Project's likely effect on groundwater in the FEIS and DEIS is similarly attacked by this appellant. IMC claims that BLM's treatment of groundwater issues violated NEPA's "hard look" and "full disclosure" requirements for the following reasons:

First, the BLM failed to collect a sufficiently broad and reliable data set in order to characterize baseline groundwater quality (i.e., without the Project), before the BLM completed the NEPA process and approved the Project. Second, the BLM severely underestimated the potential groundwater impacts of the Project * * *. Third, the BLM proposed no meaningful mitigation for groundwater impacts that could feasibly occur over the life of a 30-year project involving hundreds of mining wells.

(IMC SOR at 21.)

Appellant further alleges that the Groundwater and Surface Water Monitoring Plan has failed to remedy the absence of sufficient groundwater baseline data, and that BLM should not be permitted to rely on post-NEPA analysis conducted as part of the Monitoring Plan to support a decision already made. (IMC SOR at 29.) IMC argues that the Board should also reject any attempts by American Soda to portray the Monitoring Plan as an ongoing study such as the Board approved in Western Colorado Congress, 130 IBLA 244 (1994), involving a regional groundwater study, in that this involves a site-specific groundwater study being undertaken by the project applicant itself at BLM's direction. (IMC SOR at 31.)

Appellant argues further that BLM failed to disclose certain suspected anomalies in what little site-specific data has been collected and thus violated the "uncertainty regulation" at 40 CFR 1502.22. (IMC SOR at 33.) Equally significant, appellant claims, the baseline data collection plan that was developed violates NEPA from another perspective: the public was excluded from its preparation. Id. IMC states that the working group that prepared the Plan "did not solicit public review or comment on the Plan before it was memorialized in April 1999, after the comment period on the DEIS had concluded." Id. Appellant asserts that the fact that the Environmental Protection Agency (EPA) and the State of Colorado have indicated approval of the baseline data collection plan is not dispositive for purposes of NEPA. (IMC SOR at 34.)

In sum, appellant argues, the "EIS [FEIS and DEIS] lacks sufficient analysis of the Project's potential effects on groundwater." (IMC SOR at 39.) Appellant urges that

[c]ritical questions go unanswered in the impacts analysis, as a direct result of BLM's and American Soda's refusal to provide a complete description of American Soda's proposed solution mining technique. Basic questions that remain unanswered include, among others, which chemicals might be released to surface water or groundwater in the event of an accident at the mine, the process facilities, or along the pipeline route. * * * Many of these unanswered questions are directly traceable to the BLM's and American Soda's refusal to disclose the constituents of American Soda's process streams, and even of its waste streams on the asserted ground that such information is proprietary.

(IMC SOR at 40.) IMC also claims the Groundwater and Surface Water Monitoring Plan is not an appropriate mitigation plan, and, if a spill is confirmed, "the Plan offers no concrete steps that might be taken to investigate the extent of the contamination and to clean it up." (IMC SOR at 41.)

Another charge leveled by IMC is that BLM violated NEPA and the White River Resource Management Plan (RMP) by failing to complete baseline surveys for biological and cultural resources along all portions of the pipeline route, prior to completion of the NEPA process and Project approval. (IMC SOR at 42.) IMC argues that while it appears from the

record that some of the supplemental surveys for plants (but not cultural resources) were performed during the summer of 1999, the reports of these surveys were not disclosed to the public before release of the FEIS, or BLM's issuance of the ROD. (IMC SOR at 43.)

Appellant also claims that the project will emit a disturbingly high level of pollutants from volatile organic compounds, and that this concern is not fully addressed in the EIS process. (IMC SOR at 46-47.) Appellant argues that the mere summary fashion in which these contaminants are addressed in the FEIS is inadequate because it fails to identify the source of these emissions and "leaves the public in the dark about the environmental impacts of these potentially harmful pollutants." (IMC SOR at 48.)

Finally, IMC urges that BLM improperly ignored a viable alternative when it failed to consider extending the test mine for another 2 years. (IMC SOR at 48.) This occurred, appellant claims, after FMC Corporation, commenting on the DEIS, "specifically requested that the BLM study an expanded test mine alternative in the EIS." (IMC SOR at 49.) Appellant suggests this failure occurred because "BLM and American Soda have exaggerated the purported benefits of American Soda's full-scale commercial alternative." Id. IMC claims that "American Soda's false 'puffery' on the royalty issue raises significant doubt about the reliability of its other assertions concerning the benefits of its preferred alternative." (IMC SOR at 50.) Thus, appellant argues, by relying on a fundamentally deficient EIS process, BLM "has failed, as a matter of law, to prevent the undue and unnecessary degradation of public lands." (IMC SOR at 51.)

In addition to addressing many of the same concerns raised by IMC, appellant Sierra asserts that the FEIS fails to address the fact that the project will extract ore within 500 feet of the boundary of lands contained in the approved mine plan without obtaining the written permission of the Authorized Official as required by 43 CFR 3594.5(c). (Sierra Notice of Appeal (NOA) at 29.) Sierra argues that "the ROD's failure to specifically analyze and exempt the Project from the 500-foot buffer is practically the definition of an arbitrary and capricious action in violation of the APA." (Sierra NOA at 30.)

Sierra further claims that the EIS for this project improperly fails to assess the environmental impacts of the electrical transmission line that will supply the Piceance site. Id. Sierra states that BLM's determination, as expressed in the DEIS, to prepare a separate environmental assessment (EA) for the electric transmission line, violates 40 CFR 1502.4(a) which requires that proposals or parts of proposals which are related to each other closely enough to be, in effect, a single course of action shall be evaluated in a single impact statement. (Sierra NOA at 31.)

A third area not addressed by IMC but raised by Sierra is the alleged failure by BLM to assess the environmental impacts of filling in mud pits on the Project with drill cuttings from 2000 feet in depth by simply stating the cuttings are natural material and not hazardous waste. (Sierra NOA at 33.) Sierra claims that BLM must assess whether "burying

these drill cuttings in a mud pit will have an[y] environmental impacts, including impacts on surface water and vegetation." Id.

A fourth additional area of concern relates to BLM's alleged failure to address the impacts of reclamation activities on the environment. Id. Sierra states that the planned reclamation activities will require the use of heavy equipment, which will result in increased noise and emissions. These reclamation impacts have not been adequately addressed in the DEIS or FEIS, Sierra claims, and those documents must be revised to do so. (Sierra NOA at 34.)

Sierra alleges that BLM's failure to adequately address the Project's energy consumption requirements constitutes a fifth additional area of concern. Id. Sierra claims that BLM's statement in the FEIS that detailed information on energy consumption "is directly related to operating costs and is proprietary" violates the Council on Environmental Quality (CEQ) requirement that a discussion of environmental consequences shall include energy requirements and the conservation potential of various alternatives and associated mitigation measures. (Sierra NOA at 34; citing 40 CFR 1502.16.) For this reason, Sierra states, this information is crucial to evaluating alternatives adequately. Id.

Sierra also claims that while the pipeline spill plan developed by American Soda will provide a means of addressing a breach in the product pipeline or in the return water pipeline near the Piceance processing plant, a breach near the Parachute Site is not provided for under the spill plan. Sierra contends that "[n]o provision has been made for an emergency 'pipeline dump' tank at the Piceance processing plant, which would be necessary to protect against a lengthy disruption/breach of the product pipeline at or near the Parachute site." (Sierra NOA at 34-35.)

In addition to addressing areas not raised by IMC, Sierra expands significantly on IMC's claim that the FEIS failed to consider reasonable alternatives. Sierra states that "[n]umerous other viable alternatives * * * went unexamined, to wit: higher and/or lower temperatures[;] multimineral leasing; a slower approach (including, perhaps, phased-in mining, alternative production methods, alternative water sources, alternative pipeline routes, etc.)" (Sierra NOA at 40-41.) Sierra claims that BLM's statement in the DEIS (at 2-1) that other alternatives were considered by American Soda and BLM during the early stages of project development but not considered due to "economic infeasibility" is insufficient because "no detailed and careful analysis demonstrating the technical or economic infeasibility has been demonstrated." (Sierra NOA at 41.) Sierra asserts that BLM identified only three alternatives in the DEIS that it considered but eliminated from detailed consideration: (1) single site alternative; (2) two-well mining system; and (3) two forms of directional drilling. Id. In each case, Sierra argues, BLM dismissed the alternatives prematurely without providing adequate justification for not considering them. (Sierra NOA at 41-47.)

Another area of concern raised by Sierra is the claimed BLM failure to require an adequate bond for this project. Sierra states that neither

the DEIS, the FEIS, nor the ROD makes any mention of bonding, despite the BLM requirement that the authorized officer make a case-specific determination as to the bonding amount for the project. (Sierra NOA at 51-52, citing 43 CFR 3504.1-4.) Sierra claims that "[t]here is no evidence that BLM has even set a bond, let alone adequately considered all the unique circumstances associated with this Project." (Sierra NOA at 52.)

Sierra further argues that BLM's EIS process has thwarted public participation. Appellant urges that the chronology in this case "demonstrates BLM's reluctance from the beginning to share with the public the details of the American Soda project * * *." (Sierra NOA at 54.) Sierra argues that the failure to release the Commercial Mine Plan to the public violated BLM regulations. (Sierra NOA at 54, citing 43 CFR 3500.5-2.) Although Sierra does not dispute that American Soda's confidential information in its Plan could be exempted from public release, it states that this "indisputably does not exempt the entire Commercial Mine Plan from disclosure * * *." (Sierra NOA at 55.) Sierra claims that "BLM actively withheld the document from the public for seven months, and only released it March 8th (after the close of the DEIS comment period only), when members of the public pointed out to the Agency its legal obligations under FOIA and 43 CFR part 3590." (Sierra NOA at 56.)

Equally significant, Sierra argues, the BLM has failed to release other pertinent information, such as all pertinent information concerning the performance of the test wells and the constituents of the solution mining fluid American Soda plans to use. (Sierra NOA at 58-59.) Sierra urges that

[t]his failure represents a twofold violation of NEPA: (1) it withholds from the public information about the project it is entitled to see; and (2) it makes impossible a complete analysis of environmental impacts from the project.

(Sierra NOA at 59.)

Finally, Sierra argues that BLM's scoping process was inadequate and did not meet CEQ guidelines. Sierra claims that CEQ Scoping Guidance requires public participation, early identification of important issues and alternatives, and a coherent proposal, and that BLM has failed on all counts. (Sierra NOA at 60.)

In its Answer to Appellants' Statements of Reasons (Answer), Intervenor/Respondent American Soda first points out that IMC is an economic competitor with a nahcolite solution mine on lands near American Soda's leases and that "completion of the Yankee Gulch Project is a direct competitive threat to IMC and delay of the Yankee Gulch Project is in IMC's economic interest." (Answer at 2.)

As a brief review of its project, American Soda explains that the two sodium leases it owns, issued effective January 1, 1992, grant it the right to produce sodium from the Saline Zone within the lease borders. In 1996, BLM approved an Exploration Plan and in 1997 it approved the Test Mine

Plan. (Answer at 3.) These operations led American Soda to propose a single-site commercial mine plan for Rio Blanco County, Colorado, with processed sodium products then trucked to Rifle, Colorado, to a train load-out facility. (Answer at 4.) Concerns voiced by Rio Blanco County officials related to increased local traffic, state highway use, and the use of Piceance Basin groundwater resulted in a proposal revision by American Soda to develop a two-site operation connected by two parallel

44-mile pipelines. Id. The processing facility, to be located in Parachute, Colorado, and set on private land, would utilize a former oil shale processing facility that had been abandoned for many years. Id.

In response to comments received during scoping and during the EIS process, American Soda further revised its proposal to include the following changes: (1) eliminated a cooling tower at the Piceance Site and replaced it with an air-cooled unit; (2) provided for netting for the evaporation ponds; (3) eliminated the cooling tower at the Parachute Site; (4) doubled the number of isolation valve sets and added two instrumentation monitoring points to the pipeline; (5) expanded the groundwater monitoring program; (6) designed a subsidence monitoring program; and (7) agreed to camouflage both sites. (Answer at 5.)

Unlike trona mining operations in the Green River Basin in Wyoming, where huge tailings ponds have been created, American Soda states that its operation will produce millions of tons of soda ash without producing waste rock, while using minimal quantities of water since all water carrying the sodium in solution will be constantly recycled for reinjection after removal of the dissolved nahcolite. (Answer at 5-6.)

In explaining the public participation process, American Soda states that a scoping notice for a proposed EIS was published in the Federal Register by BLM on June 15, 1998, and that this notice was also published in local newspapers on June 10 and 11, 1998. Public meetings, attended by a total of 69 people, were held on June 24 and 25, 1998. Six comment letters related to the scoping notice were also filed with BLM. (Answer at 6; see DEIS at 6-1.) American Soda relates that the public comments received on the scoping notice were then used by BLM and a third party contractor in preparing the DEIS. Id. The DEIS was released for public comment in early January 1999, with public hearings on the DEIS held on February 10 and 11, 1999, in Meeker and Parachute, Colorado. Id. American Soda states and the record reflects that nine persons made comments at the public meetings and 43 comment letters were filed on the DEIS. Id. The comment letters included comments by EPA, FWS, the U.S. Geological Survey (USGS), the U.S. Forest Service (USFS), the Colorado Division of Wildlife, the Town of Parachute, Colorado, the Rio Blanco County Department of Development, and the Grand Valley Citizens' Alliance. Id. American Soda notes that none of these cited commenters has appealed the ROD. Id.

American Soda explains that when the FEIS was released for 60-day public comment in July 1999, 14 comment letters were received by BLM. Id. When the White River Resource Area Manager recommended approval of the

project on October 13, 1999, his recommendation was conditioned on 12 pages of stipulations which the Colorado State Director incorporated in his ROD issued October 20, 1999, at Appendix A. Id. Appendix A states that "should the monitoring indicate that impacts are occurring that were not anticipated in the EIS, corrective action shall be taken, up to and including project shutdown." (Answer at 7, quoting App. A at A-1.) The stipulations require that "[a]pproval of commercial operations under this Record of Decision is granted subject to American Soda having secured all the necessary federal, state and local permits." Id., quoting App. A at A-2. American Soda states that the injection of hot water into wells for solution mining is under the authority of the EPA's underground injection control (UIC) program, which issued American Soda a Class III UIC permit on February 9, 2000. Id., see Exh. C to Answer.

American Soda further states that baseline groundwater quality data requirements are addressed directly in the reclamation permit issued to American Soda by the Colorado Mined Land Reclamation Board. Id. For example, one requirement of that permit that must be satisfied before injecting solution mining fluids into any well is the following:

The collection of baseline ground water quality data during the 13 month period prior to the commencement of injection of solution mining fluids, subject to the permit conditions outlined below, satisfies the water quality protection mandate of the [Colorado Mineral Land Reclamation Act].

(Answer at 8, quoting Findings of Fact, Conclusions of Law and Order of the Colorado Mine Land Reclamation Board at 2.) American Soda reports that the same Reclamation Board Order then incorporated the water quality data collection program proposed by American Soda into its permit and prohibits the injection of any fluids until 5 quarters worth of water quality data have been collected and the Board has evaluated the additional data and incorporated that data in permit conditions protective of groundwater. (Answer at 8, citing Exh. D (Permit) to Answer at 2.)

American Soda notes that Appendix A to the ROD includes numerous other pre- and post-conditions related to the approval of solution mining on the leases, to include a rigorous casing and cementing program to protect aquifers and provisions for ongoing reclamation as wells are plugged. (Answer at 8.) In that regard, American Soda urges that appellants' complaints about the adequacy of the EIS process must be examined in the context of the continuing controls over the approved action retained by BLM, EPA, and State authorities under the terms of the ROD and its required permits. Id.

Respondent addresses appellants' various claims by topic, rather than individually. American Soda first addresses groundwater issues and appellants' claim that BLM should have developed more exhaustive baseline data prior to issuing the ROD, and their second claim that BLM may not rely on a report prepared by Dr. George Saulnier and submitted by American Soda as comment on the FEIS. (Answer at 9.) In addressing appellants' first issue, American Soda notes that appellants never do specify how much and

what kind of additional data should have been collected in order to satisfy NEPA. Id. Respondent states that the DEIS explains the differences in the water quality between the Upper and Lower Aquifers, both of which lie below the saline zone to be mined, as follows:

TDS [total dissolved solids] values for the saturated portion of the Uinta Formation range from 550 to 1,060 mg/l [milligrams per liter] in the Project Area located in the central part of the basin (Robson and Saulnier 1980). TDS values for the Parachute Creek Member of the Upper Aquifer range from 610 to 1,900 mg/l near the basin's center. * * * Groundwater in the Lower Aquifer [has] TDS concentrations ranging from approximately 600 mg/l along the basin margins to greater than 45,000 mg/l in the northern part of the basin. In the Project Area TDS values range from approximately 830 to 9,700 mg/l (Robson and Saulnier 1980).

(Answer at 10, quoting DEIS at 3-17.) Respondent notes that EPA classifies water containing less than 10,000 mg/l as a potential underground source of drinking water. Id. The point to be made, respondent claims, is that "regardless whether the water quality in the aquifers beneath American Soda's leases is good, average or poor, the conditions of approval incorporated into the ROD prohibit American Soda from degrading the water." Id.

Respondent observes that EPA, which is responsible for regulating underground sources of drinking water, issued an underground injection control permit to American Soda on February 9, 2000. (Answer at 11.) EPA explained that it "has determined that the geologic and hydrologic data (including water quality data) are sufficient to evaluate the request for a permit," while noting that the permit requires the collection of additional data before underground injection begins. Id., quoting from EPA's Feb. 10, 2000, Addendum to the Statement of Basis and Response to Comments at 6.

In response to IMC's objection to BLM's approval of American Soda's mine plan before the collection of 5 quarters of groundwater quality data, Respondent states that a similar though less extensive requirement was imposed on IMC when BLM approved its Wolf Ridge nahcolite solution mine plan. (Answer at 16, citing BLM's Wolf Ridge ROD at 8, attached as Exh.F to Answer.) American Soda notes that water quality parameters for the Wolf Ridge lease area, unlike those at Yankee Gulch which are based on more extensive data,

are based on sparse water quality data from only a few wells and is not inclusive of all samples taken from the area. Samples have only been taken for a very short period of time; therefore, it is not possible to show how groundwater quality on the leases might naturally fluctuate over time.

Id., quoting from Wolf Ridge FEIS at 3-10, attached as Exh. G to Answer. Respondent urges that IMC cannot explain why this sparse water quality data should be considered sufficient for the Wolf Ridge mine, but more extensive

data should not satisfy NEPA for purposes of analyzing American Soda's mine plan. Id.

Respondent next addresses IMC and Sierra's claim that BLM improperly relied upon a groundwater quality report prepared by Dr. G. J. Saulnier dated September 7, 1999, because it was a "post hoc" rationalization and because it represented a new analysis that cannot be used to support a decision already made. (Answer at 17, citing IMC SOR at 36.) Respondent states:

* * * Dr. Saulnier's report was neither "post-hoc" nor presented after the BLM had made its decision, as the appellants claim. Just the opposite is true. American Soda timely submitted Dr. Saulnier's report to the BLM as comments on the FEIS many weeks before the issuance of the ROD or the filing of this appeal. As discussed above, the report itself consists of further thoughts of Dr. Saulnier on prior groundwater quality studies, including some of his own, that have been thoroughly discussed and analyzed in the FEIS.

Id. In further response to appellants objection to BLM consideration of the Saulnier report because it was not circulated for public comment, respondents note that National Wildlife Federation, 145 IBLA 348 (1998), holds otherwise:

While NEPA mandates procedures, not substantive results, it does not require public review and comment on all information. The question of whether documents must be distributed by an agency for public comment turns on the facts of each particular case.

(Answer at 18, quoting National Wildlife Federation, 145 IBLA at 364.)

In answer to IMC's allegation that the EIS process did not adequately address the impact of sodium solution mining on oil shale beds, respondent states the DEIS does address the possible impacts to these beds. (Answer at 20, citing DEIS at 307, 4-1 to 4-3.) American Soda states that IMC misstates the lease requirements concerning oil shale, which IMC claims to require "no impact" or "zero impact" on oil shale as a result of sodium mining. (Answer at 21, citing IMC SOR at 16.) Respondent notes that the leases authorize the extraction of sodium provided the sodium mining does not "significantly change * * * the composition" of the oil shale or render it "more unsuitable in any material" respect for oil shale development. Id. Respondent stresses that the Board has already considered the argument that the leases prohibit all impacts to oil shale and has rejected that argument. Id., citing Yankee Gulch Joint Venture v. BLM, 113 IBLA 106, 138-39 (1990).

In response to the declaration of Dr. Glenn Mason relied on by IMC, respondent asserts that Dr. Mason's claim that the mining process used by American Soda "may plug the porosity and [occlude] the permeability of the oil shale and make it more difficult [to] process in the future," is little

more than his unsubstantiated opinion. (Answer at 21-22, quoting IMC SOR at 13.) American Soda states that since oil shale is naturally impermeable, it is not clear from Dr. Mason's declaration exactly how its "permeability" will be occluded. (Answer at 21.) Similarly, with regard to IMC's reliance upon a July 8, 1999, letter to BLM indicating that "BLM wildly underestimated the magnitude of oil shale resources impacted by the project," respondent states that USGS is including in its analysis hundreds of millions of barrels of shale oil contained in the lower half of the R-2 zone and the entire R-1 zone. (Answer at 22, citing IMC SOR at 13.) Respondent explains that R-1 zone is beneath the saline zone, not within its lease, and that its mining operation will have no effect. It further explains that while a small portion of the R-2 zone lies within the saline zone, it is at the very bottom of the saline zone and it is unlikely that the mine cavities will extend into the R-2 zone. Id.

American Soda responds next to IMC and Sierra's contention that BLM has not sufficiently considered the risks of subsidence because BLM is not certain what the size and shape of the solution mining cavities will be at maturity. Respondent states that while the EIS explains that the cavity size created by each well is not expected to exceed 200 feet in diameter, subsidence modeling was nevertheless done conservatively, assuming cavities 200 feet in diameter. (Answer at 23, citing DEIS at 2-6, 4-2.) Even at that size, respondent notes, pillars would be 100 feet in diameter considering the 300 foot interval between drill wells. Id. While American Soda acknowledges that the memo attached to Dr. Mason's Declaration, filed on behalf of appellant IMC, claims that subsidence may be more significant than the 1-3 feet over geologic time predicted by the modeling analysis adopted by BLM, respondent urges that no support for this conclusion is offered and the speculation by IMC should in no way discredit the subsidence analysis in the EIS which was based on extensive modeling. Id.

With respect to appellants' claims that an inadequate range of alternatives was considered in BLM's analysis, respondent states that the three development alternatives that were considered all related to the purpose for which the plan was submitted, to mine sodium at a profit, while the alternatives appellants claim should have been analyzed would not do that. (Answer at 26.) American Soda asserts that the appellants' proposed alternatives (continued operation of the test mine, the two-well method, extension of the test mine for 2 years) were either economically infeasible or would result in greater environmental disturbance than the proposed alternatives. (Answer at 25.) With respect to the two-well method, Respondent explains that this method of mining would use twice the area for well-head facilities as does American Soda's method. (Answer at 26.) American Soda urges that agencies need not discuss alternatives that would not satisfy the purposes of the proposed action. Id., citing Allen D. Miller, 132 IBLA 270, 274 (1995); Wyoming Outdoor Council, 151 IBLA 260, 272 (1999); Concerned Citizens Alliance v. Slater, 176 F.3d 686, 706 (3d Cir. 1999). Respondent also notes that the CEQ acknowledges that there is "no reason to disregard the applicant's purposes and needs and the common sense realities of a given situation in the development of alternatives." (Answer at 25, quoting CEQ Guidance Memorandum, 48 FR 34,263, 34,267 (July 28, 1983).)

American Soda next addresses IMC's claim that BLM cannot rely upon biological or cultural surveys completed after the conclusion of the NEPA process. Respondent states, with respect to cultural resources, that the EIS describes the cultural resources in the area based on the results of numerous Class III archeological surveys conducted by American Soda and others. (Answer at 27, citing DEIS at 3-44 to 3-49.) Respondent asserts that this meets the CEQ requirement that an EIS shall succinctly describe the environment of the area to be affected. Id., citing 40 CFR 1502.15. American Soda explains that from the data in the surveys already conducted, BLM was able to conclude that some of the pipeline corridor would not require an intensive inventory, because sites are unlikely to be located in those areas; i.e., the flood plain of Hatch Gulch and the steep face of Davis Point. Id. In other unsurveyed areas, other than those not requiring survey, respondent notes that BLM has stated it would survey prior to construction, and that this conforms to Colorado BLM's Handbook for Cultural Resources Inventory, Evaluation and Mitigation (Handbook), which states that a Class III inventory is usually conducted "[p]rior to any surface disturbing activity." (Answer at 28, quoting Handbook, H-81001-1, Release 8-14 at 16.)

With regard to the appellants' assertion that an inadequate biological analysis has been undertaken, respondent states that the fact that BLM has required American Soda to develop a monitoring plan for the two threatened plant species (Dudley Bluffs bladderpod and Dudley Bluffs twinpod) in the area, despite the fact that the DEIS notes that these plants "are not known or expected to occur along the pipeline route," satisfies the approved methodology set forth in Rocky Mountain Pipeline Trades Council, 149 IBLA 388 (1999), where the environmental assessment provided that field surveys for an endangered plant would be conducted before the pipeline was constructed through potential habitat. (Answer at 28.)

In response to IMC's claim that the EIS contains an inadequate discussion of volatile organic compound (VOC) emissions, American Soda responds that the initial DEIS VOC figure of 13.8 tpy (tons per year) for the Piceance (Upper) site was based upon estimated VOC emissions from the test mine boiler, initial processing plant boilers, initial processing plant emergency generators and the emergency fire pump. The construction activities were estimated to produce 3.8 tpy of that amount. (Answer at 30.) As a result of comments on the DEIS, in which much higher figures were reported in Western Wyoming trona solution mines, and consultation with Colorado officials during the permit review under the Clean Air Act, potential emissions from wellhead gas separators and the stripper system of an additional 24.7 tpy were added to the 13.8 previously addressed from combustion sources (discussed in the DEIS) in compiling the FEIS. Id., citing FEIS at 5-20. The air permit subsequently issued to American Soda thus prohibits respondent from exceeding the 38.5 tpy level of VOC emissions.

A related claim by IMC that Total Organic Carbon (TOC) concentrations in American Soda's test wells furnish evidence that oil shale is being broken down in the solution process, and that this will increase VOC

levels, is also addressed. Respondent asserts that TOC levels are not proportional or related to VOC levels, and that no agency has seen fit to relate the two. (Answer at 31.) Further, American Soda explains that the test mine process involves recirculation of the injection fluid through an open cooling pond, not present in the proposed mine. There is considerable potential, respondent states, for organic sources to have been added to this pond in light of algal growth, a wind-blown organic material, and a flood event. Id. For this reason, respondent asserts, it is likely that much of the TOC measured in the monitoring wells and cited by IMC was actually injected into the well, rather than produced by the well. Id.

The Sierra charge that the proposed operation is inadequately bonded is also addressed by American Soda. Respondent states that prior to issuance of the two leases, it was required to furnish a bond as prescribed in 43 CFR 3521.4, and that it did so. (Answer at 32.) In addition, respondent states that it posted a required reclamation bond in the amount of \$3,034,000 on January 12, 2000. Id.; see BLM Notice attached as Exh. J to Answer.

In response to the Sierra charge that BLM tried to thwart public participation in the NEPA process by conducting scoping on the EIS (in June and July 1998) before American Soda submitted its formal commercial mine plan application to BLM (in August 1998), respondent states that CEQ regulations direct agencies to "integrate the NEPA process with other planning at the earliest possible time to insure that planning and decisions reflect environmental values, to avoid delays later in the process, and to head off potential conflicts." (Answer at 32-33, citing 40 CFR 1501.2.) American Soda notes that Sierra has not described any "significant change" in the Yankee Gulch project which was disclosed in the mine plan but not in the scoping documents so as to require BLM to reexamine the issues it identified for analysis in the EIS. (Answer at 33.) Respondent states that while appellants argue that BLM and American Soda withheld critical groundwater information during scoping, the list of issues raised by the public, reviewing agencies, and the interdisciplinary team during the scoping process include groundwater issues related to the effect of contamination of groundwater aquifers and the need for groundwater quality monitoring, the very issues which Sierra claims it would have raised had the mine plan been available before March 1999. (Answer at 34.) American Soda urges that all pertinent details of the mine plan were described in the DEIS and any temporary public unavailability of the mine plan in no way hampered public comment. (Answer at 35.)

Appellant Sierra had claimed that BLM violated 43 CFR 3594.5(c) by authorizing mining within the 500 foot buffer established in that Code section. Respondent, conversely, states that while BLM may waive the 500-foot limit in the future to achieve maximum recovery of the sodium mineral as required by 43 CFR 3594.1, it has not yet done so. Id. There is no evidence in the record that this provision has been waived.

Sierra's assertion that the construction of a transmission line by White River Electric Association is a connected action is directly rebutted by respondent. American Soda states that the new line is being built to

connect two existing lines which will enhance system reliability within the White River service area. As such, respondent claims, it has independent utility, and is not a connected action that must be addressed in the Yankee Gulch EIS. (Answer at 35-36, citing Rocky Mountain Pipeline Trades Council, 149 IBLA at 400.)

In response to Sierra's assertion that the EIS does not disclose the chemical makeup of the injection fluid, respondent states that the injection fluid is hot water and that this information is in the DEIS. (Answer at 36, citing DEIS at 2-5 where it so states.)

In addressing Sierra's claim that BLM did not analyze the impacts of disposal drill cuttings, respondent noted that this issue was not raised in comments by any appellant. American Soda nevertheless explains that the ROD provides that a pit liner or closed circulation system shall be required when drilling all wells. Id.

With respect to Sierra's claim that BLM did not analyze the environmental impacts of final reclamation operations, respondent asserts that this claim was similarly not raised in any of the comments to the EIS. Respondent urges that appellants' claim that there will be noise and emission impacts from heavy equipment use in final reclamation is nothing more than speculation. Id. American Soda argues that the burden is on appellants to support their allegations with evidence showing error. Id., citing Rocky Mountain Pipelines Trades Council, 149 IBLA at 398.

Finally, in response to appellants' claim that BLM violated 40 CFR 1502.22 because it did not resolve alleged uncertainties in the water quality baseline data and in the estimates of the mine cavity size, American Soda states that these uncertainties were disclosed and additional data was not required to reasonably evaluate any potential significant impacts. (Answer at 37, citing DEIS at 2-6, 4-17; FEIS at 2-1, 2-8, 2-21, 4-3, 5-42.) Respondent further cites Colorado Environmental Coalition v. Dombeck, 185 F.3d 1162 (10th Cir. 1999) where the court approved of USFS use of the best available data to analyze the possible impact of ski area expansion on the lynx population and determined that appellants had failed "to show how additional, site-specific lynx data is 'essential' to reasoned decision making." Id. Respondent urges that similarly, in this case, BLM used the best available data, which it states was extensive, on water quality and mine cavity size and disclosed uncertainties in the extent of that data. Id. American Soda notes that additional data will continue to be collected and that this is precisely the approach advocated by the CEQ in its report on the effectiveness of NEPA after 25 years experience. (Answer at 38.) Respondent observes that the CEQ recommends in its report adaptive environmental management which "recognizes the limits of knowledge and experience and moves iteratively towards goals in the face of uncertainty." Id., quoting from CEQ, The National Environmental Policy Act: A Study of Its Effectiveness After Twenty-Five Years at 32 (1997).

In its Reply Brief (Reply), BLM urges that this case demonstrates that every attempt at compliance with NEPA—no matter how thorough or

conscientious—is subject to attack by those who just do not want the project to succeed. In this case, those project opponents are mostly competing companies and one environmental organization, which never shows how any of its members may be harmed by this project. (Reply at 2.) In addressing the issues raised by appellants, BLM begins with the question of adequate data related to groundwater. In response to the charge that BLM relied upon inadequate baseline data before issuing a permit, BLM asserts that appellants offer no reasoned analysis concerning how the data relied upon is inadequate nor why BLM should obtain additional baseline data. (Reply at 5.)

BLM explains that in 1997, it issued a permit for a pilot project to test this kind of operation on a smaller scale. From the data developed in the pilot, American Soda designed the proposed project here under review. (Reply at 9.) BLM states that as an engineering matter, it has no serious doubt that the project has been properly designed to protect the Upper and Lower Aquifers from any possible contamination from the mining process, although the operation will be constantly monitored by monitoring wells and by temperature and pressure readings. Id. BLM further notes that because the heat source is external and can be controlled with some precision, there is little chance American Soda could lose control of the operation. Id. Additionally, the fact that the EPA, and not BLM, is the principal regulatory authority for the injection of the hot water solution into the mineral strata ensures that regulations pursuant to the Underground Injection Control (UIC) program to implement the provisions of the Safe Drinking Water Act, 40 U.S.C. § 300f (1994), and that Act's implementing regulations, 40 CFR Part 146, are complied with. (Reply at 10.)

BLM asserts that in contrast to the circumstances in Island Mountain Predators, 144 IBLA 168 (1998), where the Board determined additional information on groundwater was required because of the risks involved, this case has no open pit mine, no acid or other hazardous materials involved in the mining process, and no hazardous waste dumps. (Reply at 12.) Additionally, BLM notes, unlike Island Mountain Predators, where large uncertainties existed in the water flow due to the igneous geology, here the geology is very uniform and of sedimentary origin, making the groundwater flows easier to predict and allowing for an analysis of reasonably foreseeable impacts pursuant to 40 CFR 1502.22. (Reply at 12, 13.)

In response to appellants' claim that BLM engaged in post-hoc rationalization and thus possessed inadequate baseline data to approve the project in the ROD, BLM points out that in requiring both the submission of additional baseline groundwater data before actual operations may begin and in requiring readings from additional water wells after mining has begun, BLM is imposing normal monitoring for any project which has environmental impacts. (Reply at 14.) In fact, BLM notes, the mining operations in the Powder River Basin in Wyoming utilize 4000 monitoring wells to keep track of the groundwater hydrologic regime. (Reply at 15.) BLM states that this does not mean the operation was permitted with inadequate data; it just means that the agency is satisfied with the overall concept but requires monitoring data to determine actual operating conditions. (Reply at 16.)

With regard to the charge that the Saulnier study presented by American Soda was similarly a post-hoc rationalization after the decision was already made, BLM explains that it was fully aware of the contents of the report (Saulnier Report) before it issued its ROD, as it was submitted by American Soda with its comments on the FEIS. (Reply at 17.)

BLM next addresses appellants' claim that it studied an inadequate number of alternatives. BLM states that under the applicable regulation, 40 CFR 1502.14(a), it was required to rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated. (Reply at 19.) It claims that is precisely what it did in its evaluation of four reasonable alternatives and its rejection of infeasible alternatives such as the single site alternative (as a result of traffic concerns and inadequate water) and the directional drilling alternative (as a result of the inability to encase the directional bores in concrete casings.) Id., citing FEIS at 2-35 to 2-37. Moreover, BLM asserts, the first five of Sierra's lengthy list of additional alternatives were in fact considered and discarded for reasons stated above, while the suggestion for using a double pipeline "seems quixotic" in light of the fact that pipeline technology is not new and the pipeline must meet the safety standards in 49 CFR Part 195. (Reply at 20.) Sierra's last proposed alternative, that a permit be offered for another experimental operation, BLM suggests, is not that different from the approved preferred alternative which requires American Soda to establish initially that it can operate as it has proposed. (Reply at 21.)

Finally, BLM states that the case relied upon by Sierra for the argument that BLM's alternatives were inadequate, California v. Block, 690 F.2d 753 (9th Cir. 1982), is inapposite because it addressed land eligible for wilderness designation under the Wilderness Act of 1964, 16 U.S.C. § 1311 (1994), and the alternatives considered contained an assumption which improperly restricted the amount of land that could be designated wilderness. (Reply at 21, citing California v. Block, 690 F.2d at 765.) BLM also notes that cases involving wilderness, unlike this case, typically involve numerous decisions involving many different land uses of millions of acres making many alternatives absolutely necessary. (Reply at 21-22.)

Intervenor Grand Valley Citizens Alliance, an organization primarily comprised of persons residing in Garfield County, Colorado, where a part of the Yankee Gulch Project will be conducted, filed a number of comments with BLM related to the DEIS, in which it raised issues concerning the effect of the project on geology, soils, surface water, groundwater, air quality and meteorology, noise, vegetation, wildlife, wetlands, threatened and endangered species, visual resources, and transportation. In its brief before this Board, the Citizens Alliance urges the project be approved and claims that all its questions were fully answered by BLM and American Soda.

[1] It is well established that the adequacy of an EIS must be judged by whether it constitutes a "detailed statement" that takes a "hard

look" at the potential significant environmental consequences of the proposed action, and reasonable alternatives thereto, considering all relevant matters of environmental concern. 42 U.S.C. § 4332(2)(C) (1994); Colorado Environmental Coalition (CEC), 142 IBLA 49, 52 (1997), and cases cited. In general, an EIS must fulfill the primary mission of section 102(2)(C) of NEPA, which is to ensure that BLM, in exercising the substantive discretion afforded it to approve or disapprove mining operations, is fully informed regarding the environmental consequences of such action. See 40 CFR 1500.1(b) and (c); Natural Resources Defense Council v. Hodel, 819 F.2d 927, 929 (9th Cir. 1987).

When BLM has complied with the procedural requirements of section 102(2)(C) of NEPA, by actually taking a hard look at all of the likely significant environmental impacts of a proposed action, it will be deemed to have complied with the statute, regardless of whether a different substantive decision would have been reached by this Board or a court (in the event of judicial review). See Strycker's Bay Neighborhood Council v. Karlen, 444 U.S. 223, 227! 28 (1980), and cases cited.

In deciding whether an EIS has done so, it is well settled that a rule of reason will be employed such that the question becomes "whether an EIS contains a 'reasonably thorough discussion of the significant aspects of the probable environmental consequences.'" State of California v. Block, 690 F.2d at 761, quoting from Trout Unlimited v. Morton, 509 F.2d 1276, 1283 (9th Cir. 1974).

It is established that, in order to overcome BLM's decision to approve a plan of operations, an appellant bears the burden of demonstrating by a preponderance of the evidence, with objective proof, that BLM failed to consider, or to adequately consider, a substantial environmental question of material significance to the proposed action or otherwise failed to abide by section 102(2)(C) of NEPA. See CEC, 142 IBLA at 52.

We turn first in our discussion to appellants' contention in their respective SORs that BLM's ROD and EIS (DEIS and FEIS) for the Yankee Gulch Project did not comply with NEPA. Thus appellants contend that the information gathered and presented in the ROD was based on inadequate environmental analysis in violation of NEPA, 42 U.S.C. § 4321 (1994), and its implementing regulations at 40 CFR Part 1500.

IMC and Sierra's arguments also raise, both directly and indirectly, the question whether BLM's actions comply with section 302(b) of FLPMA, which provides: "In managing the public lands the Secretary shall, by regulation or otherwise, take any action necessary to prevent unnecessary or undue degradation of the land." 43 U.S.C. § 1732(b) (1994); see 43 CFR 3809.2-2 (1999); Island Mountain Protectors, 144 IBLA 168, 202 (1998); Charles S. Stoll, 137 IBLA 116, 125 (1996). Like NEPA, the provisions of section 302(b) of FLPMA require BLM to consider the nature and extent of impacts of a proposed operation and environmental consequences to resources and lands outside the area of operations. Kendall's Concerned Area Residents, 129 IBLA 130, 140-41 (1994); Nez Perce Tribal Executive Committee, 120 IBLA 34, 36 (1991); see Sierra Club v. Hodel, 848 F.2d 1068,

1091 (10th Cir. 1988). Accordingly, BLM's action here must be weighed against those provisions as well.

The five main thrusts of appellants' NEPA arguments are, first, that the EIS is inadequate and flawed because it does not adequately analyze the environmental impacts of the proposed Yankee Gulch mining operation on groundwater. Appellants claim that because no proper analysis has been conducted, the decision approving the project must be set aside and the case remanded to BLM for further study. Related to this, IMC and Sierra claim that BLM erred by using new data to "fix" an otherwise inadequate EIS and ROD. This improper "post hoc rationalization," they assert, involved the BLM consideration of the Saulnier study provided by American Soda very late in the process which was not subject to comment, as required, during the EIS process. Appellants' third major argument relates to the alternatives considered and the claim that the EIS discussion of alternatives was insufficient and, in particular, several alternatives were rejected without adequate discussion or consideration. Appellants also assert that an inadequate review of impacts of the proposed mining on the underlying oil shale was conducted. Finally, appellants charge that potential subsidence within the project area has not been adequately analyzed.

We turn first to the groundwater issue. Appellants' arguments concerning the adequacy of the EIS' review of groundwater focus on 40 CFR 1502.22, which provides, in relevant part:

When an agency is evaluating reasonably foreseeable significant adverse effects on the human environment in an environmental impact statement and there is incomplete or unavailable information, the agency shall always make clear that such information is lacking.

In that regard, appellants argue that the Board's recent decision in Island Mountain Protectors, *supra*, ruled that inadequate analysis of baseline groundwater conditions and of potential impacts to groundwater in an EIS violated BLM's statutory and regulatory duties. They urge that these same issues are raised in this case, implying that Island Mountain Protectors should control the disposition of those issues in this case.

We do not find Island Mountain Protectors controlling. In that case, the mines being considered were known to have substantial groundwater problems, and therefore it was necessary for BLM to gather significant additional information to make an informed judgment concerning expansion of mining activities. Without that additional information, it was reasonable to find that the required "hard look" standard had not been satisfied.

In this case, there is no comparable uncertainty. While BLM did not have complete information concerning groundwater impacts, the State of Colorado had issued a ground water permit and there was significant evidence regarding the Class III nature of the water in the Upper and Lower Aquifers below the mineralized zone within the confines of the permitted area. BLM clearly had sufficient information to evaluate

potential adverse effects and it fairly acknowledged those uncertainties that did exist within the FEIS.

The relatively simple stratigraphic geology in this case, which allows for predictable groundwater flow, can be contrasted to the complex igneous geology in Island Mountain Protectors, *supra*. This geological context must be considered with the careful groundwater monitoring plan that was designed to ensure effective measures can be taken when or if the levels of suspended solids increase. These together lend support to the determination that the existing information is adequate to evaluate the proposed action. Likewise, the EPA, the expert agency on groundwater quality, determined that "the geologic and hydrologic data (including water quality data) are sufficient to evaluate the request for a permit." *See* Exh. E to Answer at 6. While admittedly the EPA process of approving an underground injection permit and the BLM process of carefully reviewing all groundwater concerns implicated by the proposal under NEPA are separate and distinct, EPA's decision nevertheless reflects that the EIS process in this case contains a "reasonably thorough discussion of the significant aspects of the probable environmental consequences." *See San Carlos Apache Tribe*, 149 IBLA 29, 46 (1999).

Nor are we convinced, as claimed by appellants, that the monitoring program imposed by BLM reflects that the baseline data developed during the EIS process is insufficient. Quite to the contrary, monitoring and enforcement programs used to enhance and refine the existing data base have been cited with approval by the Board in Rebecca S. Anderson, 145 IBLA 206 (1998), and Red Thunder, 117 IBLA 167 (1990), as necessary elements of the continuing process available to BLM in taking the "hard look" required by section 102(2)(C) of NEPA. In Red Thunder, 117 IBLA at 175-76, for example, the Board found that the several water monitoring wells used in that project, as in this, were necessary to ensure the water quality in the project area was maintained.

Appellants have presented no evidence to contradict BLM's conclusions regarding the extent to which the groundwater in the permit area will be adversely impacted as a result of the mining operations. They have therefore failed to demonstrate that there will be any appreciable increase in contaminants in either of the two aquifers included in the groundwater system as a result of mining operations. Nor have appellants offered any factual support to contradict BLM's conclusion that there will be no significant impact to the overall Piceance Basin from these operations. More importantly, our careful review of the record in this case, to include the Groundwater and Surface Water Monitoring Plan in Appendix G, instructs that there is sufficient information available regarding groundwater quality to allow BLM to reasonably evaluate potential adverse impacts. *See* DEIS at 3-15 to 3-21, 4-13 to 4-18; FEIS at 5-8 to 5-16, Appendix G.

Appellants have failed to establish that their objections to BLM's calculations of the impacts on groundwater amount to anything more than a disagreement between experts. We have long held that the Department is entitled to rely on the reasoned analysis of its experts. *See West Cow Creek Permittees*, 142 IBLA 224, 238 (1998), and cases cited therein.

Further, in order to overcome BLM's evaluation, appellants must do more than offer a contrary opinion; it "must show by a preponderance of the evidence, that BLM erred when collecting the underlying data, when interpreting the data, or when reaching the conclusion." Id. Appellants have not made that showing.

We next address appellants claims that the EIS process was flawed because BLM considered the Saulnier Report in issuing the ROD, yet did not provide this report to the public for comment. The 1999 Saulnier Report addressed groundwater impacts in the project area. It was considered by BLM in developing the ROD. The Report was not provided to the public for comment, however, because it became available to respondent American Soda during the comment period on the FEIS. Appellants contend that the mandate within CEQ regulations 40 CFR Part 1500 and Part 1502 that environmental information be made available to public officials and citizens before decisions are made requires now that this information not be considered in evaluating the sufficiency of the EIS process.

We disagree. We note first that the Saulnier study provided no information used in the ROD different from that provided earlier in comments to the DEIS and the report has been thoroughly addressed in this forum by appellants. As this Board stated recently in Newmont Mining Corp., 151 IBLA 190 (1999), "CEQ * * * now requires Federal agencies * * * to consider all existing credible evidence and [to] prepare an 'evaluation of such impacts based upon theoretical approaches or research methods generally accepted in the scientific community.'" 151 IBLA at 206 (emphasis in original; quoting 40 CFR 1502.22(b) (1987)). We further observed in National Wildlife Federation, 145 IBLA at 364:

While NEPA mandates procedures, not substantive results, it does not require public review and comment on all information. The question of whether documents must be distributed by an agency for public comment turns on the fact of each particular case.

Dr. Saulnier's Report, attached as Exh. H to American Soda's Answer, updated his thoughts from a 1980 report on groundwater baseline data and analysis for the Piceance Basin. Nowhere in the FEIS does BLM rely upon his discussion of the anomalous 20-1 well, one aspect of the 1999 Report, relying instead upon data provided in Saulnier's earlier 1980 report concerning TDS values in the Uinta Formation located in the project area in the central part of the Piceance Basin. See DEIS at 3-17; FEIS at 5-9.

We further note that information from the Saulnier Report considered by BLM in the EIS process does not change one assumption of the FEIS, relate directly to an alternative action, or show that there are significant aspects of the project that were not disclosed in the FEIS. For these reasons, the fact that the information was not released expressly for public comment is not, under the facts of this case, a violation of NEPA.

NEPA also requires that an EIS consider "alternatives to the proposed action." 42 U.S.C. § 4332(2)(C)(iii) (1994). Regulations of the CEQ provide that Federal agencies shall, to the fullest extent possible, "[u]se the NEPA process to identify and assess the reasonable alternatives to proposed actions that will avoid or minimize adverse effects of these actions on the quality of the environment." 40 CFR 1500.2(e). Further, agencies shall "[r]igorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated." 40 CFR 1502.14(a). Agencies need not discuss alternatives that would not satisfy the purposes of the proposed action or that are remote or speculative. Headwaters v. BLM, 914 F.2d 1174, 1180-81 (9th Cir. 1990); City of Aurora v. Hunt, 749 F.2d 1457, 1467 (10th Cir. 1984); Roosevelt Campobello International Park Commission v. EPA, 684 F.2d 1041, 1047 (1st Cir. 1982). In a leading case on the requirement to discuss alternatives, Judge Leventhal stated that "the alternatives required for discussion are those reasonably available * * *." National Resources Defense Council v. Morton, 458 F.2d 827, 834 (D.C. Cir. 1972). Judge Leventhal continued: "In the last analysis, the requirement as to alternatives is subject to a construction of reasonableness * * *." Id.

In our examination of appellants' claim that an inadequate array of alternatives were considered, we are unpersuaded. Under the applicable regulation, 40 CFR 1502.14(a), BLM was required to rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated. Our review indicates that this is precisely what BLM did in its evaluation of four reasonable alternatives and its rejection of infeasible alternatives such as the single site alternative (as a result of traffic concerns and inadequate water) and the directional drilling alternative (as a result of the inability to encase the directional bores in concrete casings). See FEIS at 2-35 to 2-37.

Moreover, we observe that the first five of Sierra's lengthy list of additional alternatives were in fact considered and discarded because they were infeasible and/or uneconomic, while consideration of an alternative in which a double pipeline is required was unnecessary since the pipeline must already meet the safety standards in 49 CFR Part 195. With respect to Sierra's last proposed alternative, that a permit be offered for another experimental operation, we must agree with BLM that this requirement is already incorporated in the approved preferred alternative which requires that American Soda establish initially that it can operate as it has proposed.

The record confirms that BLM considered and evaluated other alternatives but eliminated them from detailed analysis because they were not found to be reasonable. It is well established that BLM may eliminate an alternative with obvious disadvantages from detailed consideration. See Sierra Club (on Judicial Remand), 80 IBLA 251, 265 (1984). In each case

in this record, BLM briefly discussed the reasons for eliminating alternatives. (FEIS at 2-35 to 2-37.) Appellants demand more detail, asserting that it is legally required. We are not persuaded. BLM has provided the brief description called for by the regulation. Appellants have shown no error.

We now address appellant IMC's claim that the EIS process inadequately analyzed the effect of sodium solution mining on the underlying oil shale. (IMC SOR at 12-21.) This claim is based largely on Dr. Mason's declaration in which he states that BLM is wrong in concluding that no significant impacts to oil shale will occur as a result of the solution mining operations. (IMC SOR at 13.) No data and no scientific substantiation are offered for this position. IMC further argues that the lease provisions require that there can be "no impact" or "zero impact" on oil shale as a result of the mining operation. (IMC SOR at 16.) We have previously addressed these same lease provisions, including the argument that the leases allow no impact on the oil shale beds, and have rejected that argument. See Yankee Gulch Joint Venture v. BLM, 113 IBLA at 138-39. As to Dr. Mason's claim that "the mining process used by American Soda may plug the porosity and acclude [sic] the permeability of the oil shale * * *," we must agree with American Soda that oil shale is naturally impermeable, thus making this charge meaningless and leading us to conclude that Dr. Mason's opinions are based upon faulty logic, and further to conclude that his statement in his declaration that BLM is wrong with respect to the impacts of nahcolite mining on oil shale, is without merit.

The final significant claim of appellants relates to their assertion that BLM has not adequately considered the risks of subsidence because BLM is not certain what the size and shape of the solution mining cavities will be at maturity. The extensive modeling used by American Soda on cavity development coupled with the Agapito Report on subsidence prepared for American Soda which indicates subsidence in the well field of from 1-3 feet, has been attacked by appellants through a memo attached to the Mason Declaration. Again, as with his assertions concerning oil shale, the memorandum attached to his Declaration is not supported by data or other information. Mason claims that "removal of 20 to 25% of the rock volume by the mining process, may produce greater than expected subsidence." See Memorandum attached to Mason Declaration. As we find no support in the record for Doctor Mason's speculation on this issue, and no support for his conclusion, we give no weight to appellants' arguments regarding subsidence when compared to the subsidence analysis set out in the EIS which was based on extensive modeling.

To the extent appellants have raised other claims in this case that have not been specifically addressed, they have been considered and found to be without merit. See Glacier-Two Medicine Alliance, 88 IBLA 133, 156 (1985). All remaining arguments of appellants raised in their SORs have been considered and rejected as unsupported in the record, or satisfactorily responded to by American Soda or BLM in their Answers.

Therefore, pursuant to the authority delegated to the Board of Land Appeals by the Secretary of the Interior, 43 CFR 4.1, the State Director's decision approving the plan of operations in his October 20, 1999, Record of Decision is affirmed.

James P. Terry
Administrative Judge

I concur:

James F. Roberts
Administrative Judge